1. A process to manufacture a planar magnetic write head, having an air bearing surface, comprising:

providing a lower magnetic shield layer;

forming a disc of dielectric material on said lower magnetic shield layer;

forming, on said disc, a copper coil having at least 7 turns and a DC resistance that is less than about 5 ohms;

depositing and then patterning a layer of ferromagnetic material to form a lower pole, having a top surface, that includes a centrally located trench on whose floor rest said dielectric disc and copper coil;

depositing a layer of baked photoresist to a thickness that is sufficient to cover said coil and to extend at least 1 micron above the top surface of the lower pole;

by means of chemical mechanical polishing, planarizing until said copper coil and said lower pole are just exposed;

depositing, and then patterning, an insulating layer to form a lid that fully covers said coil and said trench;

depositing a first layer of high permeability material and then patterning said first layer of high permeability material so that it contacts only said lower pole;

depositing and then planarizing a throat height defining layer on said lid whereby said throat height defining layer has a surface that is coplanar with the top surface of the lower pole;

then depositing and patterning a layer of non-magnetic material to selectively coat

said first layer of high permeability material and said throat height defining layer while leaving said lower pole uncovered on a side that opposes said air bearing surface, thereby forming a write gap;

depositing a second layer of high permeability material onto all exposed surfaces; and

then forming a top pole on said second layer of high permeability material.

2. The process recited in claim 1 wherein the step of planarizing until said copper coil is just exposed further comprises covering said layer of baked photoresist and all exposed portions of said lower pole with a layer of alumina prior to planarizing, said layer of alumina having a thickness between about 5 and 6 microns. .

3. The process recited in claim 1 wherein said magnetic shield layer is a top shield of a magnetic read head.

4. The process recited in claim 1 wherein said lower pole is CoFe, CoNiFe, or NiFe.

5. The process recited in claim 1 wherein said lower pole is deposited to a thickness between about 1 and 1.5 microns.

6. The process recited in claim 1 wherein said first high permeability layer is CoFeN.

7. The process recited in claim 1 wherein said first high permeability layer is deposited to a thickness between about 0.15 and 0.4 microns.

8. The process recited in claim 1 wherein said trench has a depth between about 2 and 4 microns.

9. The process recited in claim 1 wherein said trench has a width between about 0.5 and 0.7 microns

10. The process recited in claim 1 wherein said second high permeability layer is CoFeN.

11. The process recited in claim 1 wherein said second high permeability layer is deposited to a thickness between about 0.15 and 0.4 microns.

12. The process recited in claim 1 wherein the step of forming said copper coil further comprises:

depositing a conductive seed layer;

defining a location and shape for said coil by means of a photoresist pattern and then electroplating copper to a thickness between about 1.5 and 2.5 microns onto all areas not covered by said photoresist;

stripping away all photoresist; and

then removing all areas of the seed layer that are not covered by copper.

13. The process recited in claim 1 wherein the step of depositing a layer of baked photoresist further comprises use of spin coating.

14. The process recited in claim 1 wherein the step of depositing a layer of baked photoresist further comprises baking said layer of photoresist for about 120 minutes at a temperature between about 150 and 250 °C in an atmosphere of nitrogen.

15. The process recited in claim 1 wherein said layer of non magnetic material is alumina or ruthenium.

16. The process recited in claim 1 wherein said layer of non magnetic material is deposited to a thickness between about 0.08 and 0.15 microns.

17. A planar magnetic write head, having an air bearing surface, comprising:

a lower magnetic shield layer;

a disc of dielectric material on said lower magnetic shield layer;

on said lower magnetic shield layer, a lower magnetic pole that surrounds said disc;

on said disc, a copper coil having at least 7 turns and a DC resistance that is less

than about 5 ohms;

a layer of baked photoresist that encapsulates said coil up as far as said coil's upper surface

an insulating layer in the form of a lid that fully covers said coil and extends therefrom as far as said lower pole;

a first layer of high permeability material on only said lower pole;

a throat height defining layer on said lid, said throat height defining layer having a surface that is coplanar with the top surface of the lower pole;

a layer of non-magnetic material on said throat height defining layer and on said lower pole, except on a side of the lower pole that opposes said air bearing surface, whereby it serves as a write gap;

a second layer of high permeability material on said layer of non-magnetic material including said write gap, and on said side of the lower pole that opposes said air bearing surface; and

a top pole on said second layer of high permeability material.

18. The write head described in claim 17 wherein said lower magnetic shield layer is a top shield of a magnetic read head.

19. The write head described in claim 17 wherein said bottom pole is Co, CoNiFe, or NiFe.

20. The write head described in claim 17 wherein said bottom pole has a thickness between about 1 and 1.5 microns.

21. The write head described in claim 17 wherein said high permeability layers are CoFeN.

22. The write head described in claim 17 wherein said first high permeability layer has a thickness between about 0.15 and 0.4 microns.

23. The write head described in claim 17 wherein dielectric disc material is alumina or ruthenium.

24. The write head described in claim 17 wherein dielectric disc has a thickness between about 0.08 and 0.15 microns

25. The write head described in claim 17 wherein said second high permeability layer has a thickness between about 0.15 and 0.4 microns.

26. The write head described in claim 17 wherein said insulating lid has a thickness between about 0.1 and 0.3 microns

27. The write head described in claim 17 wherein said insulating lid is alumina.

28. The write head described in claim 17 wherein said layer of non magnetic material is alumina or ruthenium.

29. The write head described in claim 17 wherein said layer of non magnetic material has a thickness between about 0.08 and 0.15 microns.